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Subject: World thorium resources....attention: All 15 BRC members
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Figure 1. Thorium is a relatively abundant, slightly radioactive element that at one time looked like the future of nuclear power. It was supplanted when the age of uranium began with the launching of the nuclear-powered *USS Nautilus*, whose reactor core was the technological ancestor of today's nuclear fleet. Thorium is nonfissile but can be converted to fissile uranium-233, the overlooked sibling of fissile uranium isotopes. The chemistry, economics, safety features and nonproliferation aspects of the thorium/uranium fuel cycle are earning it a hard new look as a potential solution to today's problems of climate change, climbing requirements for energy in the developing world, and the threat of diversion of nuclear materials to illicit purposes. Shown are thorium pellets fabricated in the Bhabha Atomic Research Centre in Mumbai, India, which has the task of developing a long-range program to convert India to thorium-based power over the next fifty years, making the most of India's modest uranium reserves and vast thorium reserves.

http://www.americanscientist.org/include/popup_fullImage.aspx?key=qp7W6Fd564L7rvdQIIBeE977cZdYf32G364y1yB3GAuUFn0Pzbl4iQ==

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(Reasonably assured and inferred resources recoverable at up to US\$80/kg Th)

Country Tonnes % of total

Australia 452,000 18
USA 400,000 16
Turkey 344,000 13
India 319,000 12
Venezuela 300,000 12
Brazil 302,000 12
Norway 132,000 5
Egypt 100,000 4
Russia 75,000 3
Greenland 54,000 2
Canada 44,000 2
South Africa 18,000 1
Other countries 33,000 1

World total 2,573,000 From: <http://www.mineralienatlas.de/lexikon/index.php/Thorium>

I multiply these 2.5 mio tons
with the energy content of about
1 ton U235/U233/Th232 = 2.700.000 tons coal

and get about 7.000.000.000.000 coal equivalent
= 7000 Gigatons coal equivalent

Divided by today's about 15...20 Gigatons/year
world coal equivalent fossile prime power use

= 350 years

Probably more, because 80 \$/kg Thorium is a low price which influences the price of electricity
with less than 1 cent/kWh.

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Betreff: How save is MAGMA DISPOSAL ?....attention: All 15 BRC members

Good morning Blue Ribbon Commission;
I and you learn here

<http://de.wikipedia.org/wiki/Kontinentaldrift>

that the speed of the continental drift is 1...10 cm/year.

I guess this is also the speed of up-and-down-streaming magma which drives this drift.
 $10 \text{ cm/a} = 1 \text{ meter in 10 years} = 1 \text{ km in 10.000 years} = 100 \text{ km in 1 million years.}$

Enough time for rad-waste to decay.

Next question:

Is there a transport by diffusion ?
Maybe for the inert gases Xenon and Krypton ?

Xenon isotopes are produced at the nuclear fission in nuclear power plants. The short-lived ^{135}Xe which is produced in large quantities directly as presence or from the resulting from the Division ^{135}Te about ^{135}I is particularly important. ^{135}Xe has a very large capture section for thermal neutrons by $2.9 \cdot 10^6$ barn, formed the stable ^{136}Xe . This reduces the performance of the reactor because the neutrons are no longer available for Kernspaltungen available. During ongoing operation of a nuclear power plant develops balance formation and decay of ^{135}Xe , shut down the reactor, remains ^{135}Xe itself from the already existing by-products, while reducing the missing neutron slowed. We speak here of a Xenon poisoning, prevents the direct restarting of a shut down nuclear reactor.[23] This played a role in the emergence of the Chernobyl disaster.[24]

Xe-135 has 9 hours half-life.

The radioactive isotope ^{85}Kr occurs in traces in the atmosphere. It is with other short-lived isotopes by nuclear fission of uranium and plutonium. By Kernexplosionen or during reprocessing fuel enters the ambient air. After the burden fell the atmosphere with ^{85}Kr after the atmospheric nuclear weapons testing in the 1960s, [22] She rose in a measuring station in Gent, Belgium between 1979 and 1999 - Hague - significantly [23] to caused by reprocessing plant.

Kr-85 has 10 years half-life, Kr-81 229.000 years (<http://de.wikipedia.org/wiki/Krypton>)

Next question:

Would a Krypton gas bubble - dissolved
in magma in 100 km depth - come up ?

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